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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/015,630	12/17/2001	Francesco Casuscelli	217471US0	7565

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EXAMINER

EPPERSON, JON D

ART UNIT	PAPER NUMBER
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1639

DATE MAILED: 05/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/015,630

Applicant(s)

CASUSCELLI ET AL.

Examiner

Jon D. Epperson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 12-20 and 26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12-18 and 26 is/are rejected.
- 7) ☒ Claim(s) 19, 20 and 26 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Status of the Application***

1. The Response filed May 2, 2006 is acknowledged.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior office action.
3. Please note that this action is made non-final in view of Applicants' arguments.

***Status of the Claims***

4. Claims 12-20 and 26 are pending and examined on the merits.

**Withdrawn Objections/Rejections**

5. All rejections are withdrawn in view of Applicants' arguments (e.g., see 5/2/06 Response, page 4, paragraph 1 wherein Applicants have correctly noted that the cited compound does not anticipate the claims because it falls within Applicants' proviso language).

**New Rejections**

***Objections to the Claims***

6. Claim 26 is objected to because of the following informalities:
  - A. Claim(s) 26 is/are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is

required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form or rewrite the claim(s) in independent form. Claim 26 depends from claim 12. Claim 12 recites in part: "A compound of formula (I)." 26 recites the limitation "for use as a medicament." Claim 12, therefore, does not further limit claim 26 because a preamble is generally not accorded any patentable weight where it merely recited the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150-, 152, 88 USPQ 478, 481 (CCPA 1951).

#### ***Claims Rejections - 35 U.S.C. 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 12-16 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Murthy et al. (Murthy et al. "Synthesis of Heterocyclic Compounds PART IV Preparation and Antimicrobial Activity of Some 3,5-Diarylpyrazole Derivatives" *Indian Drugs* **1985**, 22(9), 462-464) (10/17/05 IDS).

For *claims 12-16 and 26*, Murthy et al. (see entire document) disclose 3,5-Diarylpyrazoles (e.g., see Murthy et al., page 463, compound 3, Registry Number

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102677-22-5), which anticipates the claimed invention. For example, compound 3 anticipates the claimed invention when  $R_7$  is  $C(=S)NH_2$ ,  $R_5$  is hydrogen,  $R_6$  is p- $C_6H_4OCH_3$  (i.e., substituted phenyl or substituted aryl) and  $R_{1-4}$  is hydrogen. The Examiner notes that Applicants' proviso language in claim 12 (e.g., "when  $R_7$  is  $CONH_2$  ... and  $R_5$  is H .... the  $R_6$  is not H,  $CH_3$  or phenyl group") is not implicated here as Applicants have only excluded a phenyl group, not a "substituted" phenyl group (e.g., compare this proviso with the next proviso that explicitly excludes "optionally substituted" phenyl groups). For claim 26, it is noted that a preamble is generally not accorded any patentable weight where it merely recited the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). Here, the "use as a medicament" statement occurs in the preamble and merely recites "the intended use of a structure" and thus is not afforded any patentable weight in accordance with cases like *In re Hirao* and *Kropa v. Robie*.

8. Claims 12-17 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Murthy et al. (Murthy et al. "Synthesis of Heterocyclic Compounds PART II Preparation and Antimicrobial Activity of Some 3,5-Diarylpyrazoles" *Indian Drugs*, 1985, 22(5), 247-251) (10/17/05 IDS).

For *claims 12-17 and 26*, Murthy et al. (see entire document) disclose 3,5-

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Diarylpyrazoles (e.g., see Murthy et al., page 249, compound 8, Registry Number 100162-04-7), which anticipates the claimed invention. For example, compound 8 anticipates the claimed invention when  $R_7$  is  $C(=O)NH_2$ ,  $R_5$  is hydrogen,  $R_6$  is p- $C_6H_4OCH_3$  (i.e., substituted phenyl or substituted aryl) and  $R_{1-4}$  is hydrogen. The Examiner notes that Applicants' proviso language in claim 12 (e.g., "when  $R_7$  is  $CONH_2$  ... and  $R_5$  is H .... the  $R_6$  is not H,  $CH_3$  or phenyl group") is not implicated here as Applicants have only excluded a phenyl group, not a "substituted" phenyl group (e.g., compare this proviso with the next proviso that explicitly excludes "optionally substituted" phenyl groups). For claim 26, it is noted that a preamble is generally not accorded any patentable weight where it merely recited the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). Here, the "use as a medicament" statement occurs in the preamble and merely recites "the intended use of a structure" and thus is not afforded any patentable weight in accordance with cases like *In re Hirao* and *Kropa v. Robie*.

### ***Claim Rejections - 35 USC § 103***

9. Claims 12-18 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nawwar et al. (Nawwar et al. "Synthesis and Molluscicidal Activity of New Derivatives of 1-(Hydroxyl/substituted Phenyl)-3-arylpropenones" *Arch. Pharm. (Weinheim)* 1993, 326, 831-836)

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and Buchi (Buchi, J. "The Constitution-Effect Relationships from a New Viewpoint" *Deutsche Apotheker-Zeitung* 1966, pages 1695-1700 (1-29 for English translation)).

For **claims 12-18 and 26**, Nawwar et al. (see entire document) disclose arylpropenones (e.g., see Nawwar et al., page 832, compound 9), which reads on the claimed invention. For example, compound 9a reads on the claimed invention when R<sub>7</sub> is C(=O)NPh and R<sub>1-5</sub> is hydrogen. For claim 26, it is noted that a preamble is generally not accorded any patentable weight where it merely recited the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). Here, the "use as a medicament" statement occurs in the preamble and merely recites "the intended use of a structure" and thus is not afforded any patentable weight in accordance with cases like *In re Hirao* and *Kropa v. Robie*.

The prior art teaching of Nawwar et al. differ from the claimed invention as follows:

For **claims 12-18 and 26**, Nawwar et al. fail to disclose the requisite R<sub>6</sub> group. That is, Nawwar et al. only disclose R<sub>6</sub> = furan (e.g., see page 832, Scheme I, compound 9a).

However, Buchi teach the following limitations that are deficient in Nawwar et al.:

For *claims 12-18 and 26*, Buchi (see entire documents) teach that “thiophene” and “pyrrole” are commonly substituted for “furan” for the purposes of modifying the biological activity of lead compounds e.g., furan → thiophene represents a “biosteric” substitution (e.g., see Buchi, page 3, Table 8).

It would have been *prima facie* obvious to one skilled in the art at the time the invention was made to substitute a thiophene or pyrrole ring for the furan ring disclosed by Nawwar et al. because Buchi explicitly state that this substitution is commonly made in the pharmaceutical arts as a result of the common chemical and/or physical properties that these two substituents display and that similar biological properties would result from such a substitution (e.g., see Buchi, page 3, Table 8; see also page 2, last paragraph, “molecules are isosteric if their peripheral electron layers can be seen as identical. IN this sense, the atoms and groups of atoms listed in table 8 are isosteric”; see also MPEP § 2144.09 “An obviousness rejection based on similarity in chemical structure and function entails the motivation of one skilled in the art to make a claimed compound, in the expectation that compounds similar in structure will have similar properties.” *In re Payne*, 606 F.2d 303, 313, 203 USPQ 245, 254 (CCPA 1979). See *In re Papesch*, 315 F.2d 381, 137 USPQ 43 (CCPA 1963) and *In re Dillon*, 919 F.2d 688, 16 USPQ2d 1897 (Fed. Cir. 1991)). One of skill in the art would have been motivated to make the substitution because, according to Buchi, “[b]y exchanging isosteric groups in active-ingredient molecules, it should be possible to produce effective analogs, since the electronic charge and physical/chemical properties of such a molecule should hardly change” (e.g., see Buchi, paragraph bridging pages 2 and 3). Finally, a person of skill in



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the art would reasonably expected to be successful because, according to Buchi, "the electronic charge and physical/chemical properties of such a molecule should hardly change" upon substitution and such changes have been applied to a wide variety of molecules (e.g., Buchi, paragraph bridging pages 2 and 3; see also page 4).

***Allowable Subject Matter***

10. Claim 19 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jon D Epperson whose telephone number is (571) 272-0808. The examiner can normally be reached Monday-Friday from 9:00 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Paras can be reached on (571) 272-4517. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jon D. Epperson, Ph.D.  
May 13, 2006

JON EPPERSON, PH.D.  
PATENT EXAMINER

